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Exporting and Firms' Performance—What about Cooperatives? Evidence from Spain

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Received: 24 September 2020; Accepted: 9 October 2020; Published: 12 October 2020



Abstract: This paper examines how exporting cooperatives evolve and differ from those that are focused on the domestic market. We use a Spanish firm-level panel data set spanning 26 years (1991–2016). We work with a wide set of variables that reflect cooperatives' performance: sales, gross operating margin, productivity, wages, employment, capital intensity, skilled-labour intensity and R&D effort. The analysis deals with two working hypotheses: (i) Exporting cooperatives perform better than non-exporters, (ii) exporting boosts performance growth. With regard to the first one, we provide evidence that exporting cooperatives outperform those that are focused on the domestic market. Cooperatives that export are more productive, larger and pay higher wages than non-exporters. In addition, they are more capital- and skilled-labour intensive. The second hypothesis does not find such conclusive results. Only employment and skilled-labour intensity of exporters show significant faster performance growth than non-exporters. Results can lend weak support to the fact that exporting boosts performance growth.

Keywords: cooperatives; exports; export premium; self-selection; learning-by-exporting; panel data; manufacturing

1. Introduction

The business environment has seen increased uncertainty and instability due to globalization, increasing economic and social technological changes, and intensified competition within markets. In the past, in a less globalized environment, companies could survive with strategies that were not very dynamic, with management models based on continuity and activities confined to the domestic market. At present, companies have to carry out continuous adaptation against a backdrop of extremely changing and competitive times. Their capacity to grow or even to succeed depends to a large extent on their ability to adopt internationalization strategies in a dynamic global marketplace [1]. Based on the idea that exports and economic-growth are positively correlated, promoting exports has become a key issue for policymakers because it will boost wealth [2].

Bernard and Jensen [3] opened an analysis of the relationship between firm characteristics and exporting that led a growing body of empirical studies whose more common conclusions are that this relationship exists and that exporting firms exhibit better performance than non-exporting ones [2]. This paper is focused on this field of analysis. Specifically, we are interested in analysing the relationship between exporting and work cooperatives of the manufacturing sector, an alternative organization to the capitalist firms. To our knowledge, our study offers the first analysis on this issue for a panel of Spanish manufacturing work cooperatives, referred to as cooperatives hereafter.

Addressing cooperatives' study is not a minor matter since Spain has a long tradition with regard to cooperatives. Nowadays, they remain an important economic engine, which is due not so much to their contribution to the Spanish macroeconomic data (they account for roughly 0.6% of the

added value, and generate, on average, just over 1% of employment), but because we are facing an organizational model that has demonstrated its capacity to survive in a capitalist environment and whose goals go further towards maximizing profits.

Cooperatives attempt as much as possible to satisfy the needs of their members and align their purposes with those of the business [4,5]. Their democratic and participative principles should be compatible with those strategies of private companies that enable them to improve their performance. Thus, they must face the challenge of harmonizing objectives linked to democracy with those linked to profits [6]. This duality between business and democracy becomes a dynamic and unstable equilibrium [7]. Previously, studies have tended to explain cooperatives as institutional instruments for correcting market failures, particularly those related to public goods and information asymmetry problems [8]. However, recent studies have shown that they can solve social, economic and environmental problems by using the entrepreneurial engine and profit instruments. It would be a dangerously limiting approach to believe that they are institutions whose only aim is to reach 'social' outcomes [9,10]. The success of organizational innovativeness depends on the organizations' ability to clearly comprehend and internalize the culture and the society in which they engage [11].

The entities themselves have recognized that the sector has to adapt to the "real needs of society", "new profiles and demands" and the "new reality before the private company" [12]. There is no doubt that exporting becomes a strategic tool to overcome economic shocks and to increase their resilience. Although the extant literature suggests cooperatives show some organizational and financial inefficiencies that limit their process of internationalization (Bretos et al. [13], based on a literature review, identify the key factors that limit the process of the internationalization of cooperatives), empirical analysis concludes that international expansion of cooperatives is not a marginal phenomenon [14].

From this perspective, the aim of this study was to analyse whether cooperatives' higher performance is linked to their decision to export. We examine how exporting cooperatives evolve and whether they differ from those that do not export. We go beyond the abundant literature that deals with the relationship between export and productivity (A survey of empirical studies over the relationship between export and productivity can be found in [15–17]) and, in line with studies such as [18–22], we test whether other characteristics of the cooperatives, apart from productivity, matter in order to understand differences in foreign market entry decisions.

The major contributions of this paper are the following: First, firms analysed by the literature are mainly capitalist firms. We contribute to the existing literature by supplying an accurate overhaul of how the Spanish cooperatives behave with regard to the exporting market, which, to our knowledge, has not yet been performed. Second, while the relationship between exports and productivity has been largely analysed, it has not been usual to include other firm characteristics in the analysis. As [23] (p. 391) state:

"We clearly know that Spanish exporters are more productive than Spanish domestic firms even before they start to export. Regarding the effects of exporting on productivity, results are mixed. However, we know very little about how exporting affects other characteristics of Spanish manufacturing firms."

Our study overcomes this gap by paying attention to other cooperative characteristics in the export market. Third, policymakers need to have a clear knowledge about the causal relationship between export activities and characteristics of cooperatives in order to improve their policies. There is no doubt that our findings will be relevant both in allowing cooperatives to move towards more affordable and efficient strategic models, and in pointing out some aspects that could help to improve economic policy measures.

The rest of the paper is organized as follows. Section 2 provides a conceptual framework related to the aim of this study. In Section 3, we explain the data source used, present the main descriptive statistics of the sample and introduce the work hypotheses. The methodology employed to test the work hypotheses is provided in Section 4, and Section 5 is devoted to the presentation of the main results. Finally, we end by concluding and discussing the most relevant results.

2. Conceptual Framework

The neoclassical trade theory pointed out that trade increases due to the specialization of countries in those industries where they have a comparative advantage, which appears because of productivity differences [24] or because of countries' export goods using the resources that they have in abundance [25,26]. In this old trade theory, the assumption is centred on the inter-industry trade. Later, new trade theory incorporated in their models the empirical fact that trade also occurs within the same industry [27]. Economies of scale and consumer preferences for variety imply that intra-industry trade increases.

These theories assumed firms' homogeneity within each economy. Since the mid 1990s, the so-called "new" new trade theory incorporated the presence of firm heterogeneity, especially between exporting and non-exporting firms. Beginning with [3], a large amount of literature documents the differences among firms depending on their participation or not in the export markets (Bernard et al. [28] summarize a number of facts and theories about international trade). In fact, it is commonly admitted that firms that export outperform those that never export. The performance gap between exporters and non-exporters is known as export premium, and its analysis follows the methodology introduced by [3]. Models tend to search for an export premium as a measure of superiority of exporters compared to non-exporters, in terms of productivity. Exporters may be better because better firms become exporters, or because exporting improves performance. In this sense, two different, but not mutually exclusive, causality explanations have arisen: self-selection and learning-by-exporting.

The self-selection mechanism implies that the most productive firms self-select into foreign markets because they are in a better position to recover sunk costs associated with foreign sales [29]. Standing out among these sunk costs, for instance, are those associated with finding buyers, researching the foreign regulatory environment and ensuring that the products conform to foreign standards, to set up new distribution channels and to adapt to the shipping regulation in that country [20]. Under a scenario of heterogeneity in performance and a monopolistic competition framework, [30] introduces a model where firms will only export if they find it profitable. The relationship between profitability and productivity implies that there is a "productivity threshold" below which firms cannot generate a sufficient profit to participate in the export market. Thus, the most productive firms self-select into exporting activities because they are able to recover sunk costs linked with foreign markets [31].

Following the self-selection mechanism proposed by [30], the empirical literature has found that other characteristics, in addition to productivity, such as size, capital, technological intensity, skilled-labour intensity, are also important to understand the decision of firms to become involved or not in foreign markets [18–22].

In addition, a related strand of research argues that firms consciously increase their productivity in order to become exporters. The *ex ante* period may suppose an intermediate step related to the timing of learning. Firms transform their intention to export into the capacity to export by increasing their technology or by improving the quality of their products before entering the foreign markets. This is what is referred to as the "learning to export" or the "effect of conscious self-selection" [32–34]. The intention and willingness to export leads firms to make conscious efforts to improve their performance, so that their productivity improves compared to non-exporters who continue to be anchored in the domestic market [32,33,35–37].

The second explanation as to why exporters may be better is related to the fact that firms become more efficient after they begin exporting. This is the so-called "learning-by-exporting" mechanism [38]. This mechanism is based on the idea that exporting becomes a process of knowledge and learning that has a positive effect on firm performance. The international market firms have to face higher competition than firms that remain in the domestic market and so they need to improve faster than them [19]. Firms gain knowledge through their interaction with foreign customers, who provide information on their needs and tastes, as well as possible changes in demand. In addition to the direct information obtained from their customers, firms can also benefit indirectly from competitors through different ways. On the one hand, by learning from them how to survive in the markets [20,39],

and on the other, by learning how to intensify their innovation in process and products in order to be competitive in the international markets [31]. This feedback allows them to enhance their products and process, boosting their innovative capacity [40,41].

Since the seminal paper of [3], the studies on the relationship between firms' performance and exporting activities have spread. Without pretending to be an exhaustive revision of the literature, we highlight some of them (A literature review can be found in [16,20,23,42]). There is widespread empirical evidence on the existence of the self-selection mechanism at country level, for instance [29] for US firms; [43] for Taiwanese and Korean firms; [38] for Colombian, Mexican and Moroccan; [44,45] for Vietnamese; [46] for Eastern European and Central Asian countries; [17,47] for China; [21,42] for Italian; [19,34] for India; [48] for the European Union, South America and China. [32] for Chile; [20] for Indonesia; [2] for the UK; [22] for 14 EU countries; [31] for Sweden.

The existence of the learning-by-exporting mechanism does not have so much empirical support. There seems to be more homogeneity in the fact that learning-by-exporting is fulfilled in the developing countries, especially when trade is geared to developed countries [16,49]. In contrast, there is more divergence in the studies focused on developed countries. Ferrante and Freo [42] present papers where the learning-by-exporting mechanism is supported, and papers where it is not. Among the papers that find evidence for learning-by-exporting at country level, we highlight [43] for the Republic of Korea and Taiwan (Aw et al. [43] indicate that learning-by-exporting is seen in Taiwan but not in Korea. The difference in findings could be because learning-by-exporting may be more important as a source of expertise and knowledge in the early period of expansion of the manufacturing sector, different in both countries, or could depend on the level of labour mobility among firms and other inter-firm contacts); [42] for Italy; [50] for the UK; [51,52] for China (Wu [51] states that the mechanism is contingent on a firm's innovation capabilities). In addition, the existence of both the self-selection and learning-by-exporting mechanisms can be found in studies such as [36] for Chile; [53] for Canada; [2] for the UK; [54] for sub-Saharan countries (In the case of learning-by-exporting, export destination matters, with China and India being the best destinations); [21] for Italy; and [55] for Russia.

Apart from the research lines discussed above, we would like to remark on two more fields of research related to export firms' behaviour. On the one hand, there is literature that deals with the possibility of a U-shaped trend in the differences between exporters and non-exporters, that is to say, the possibility of a non-constant path in the dynamic of exporters [23,56]. On the other, there are studies that analyse the link or bidirectional causality of the relationship between innovation activity and decision to export [40,57–63].

Equally fruitful is the literature focused on the Spanish economy. In a non-exhaustive way, we would like to highlight the following. Delgado et al. [64] examined productivity differences between exporting and non-exporting over the period 1991–1996. Results support self-selection. However, the evidence in favour of learning-by-exporting is rather weak. Fariñas and Martín-Marcos [18] extend the previous study and analyse not only productivity, but also various performance measures. Their results show again, on the one hand, the presence of the self-selection mechanism and, on the other, the lack of significant changes in performance between non-exporters and exporters after entry takes place. Serrano and Myro [23], during the period of 1990–2013, also analyse the evolution of a set of firm variables before and after they start to export, and how this fits with the self-selection and the learning-by-exporting hypotheses. In general, they find that self-selection exists. The same authors [65] confirm the existence of a productivity premium for the period 2009–2013.

For the period 1990–2000, Mañez-Castillejo et al. [66] pay special attention to self-selection into exports. They distinguished between direct and indirect links. Their results indicate that there is a self-selection direct effect coming from productivity. There is also a self-selection indirect effect because the higher the productivity the higher the probability of introducing process innovations and, therefore, the likelihood of starting to export. Moreover, there is another self-selection indirect effect coming from process innovations that operates through productivity, i.e., process innovations increase productivity and, therefore, the probability of exporting. Mañez-Castillejo et al. [67] investigate both self-selection

and post-entry firm productivity in the same period. They find evidence in favour of the existence of the self-selection process in small firms, but they do not find this result for large firms. They also find evidence of post-entry productivity gains both for large and small firms. However, the time patterns of this extra productivity growth seem to be size-dependent. Focused on a more recent period (2006–2014), Mañez et al. [68] analyse the relation between the firms' decisions to export output and/or import intermediate inputs, productivity and mark-ups. They confirm that the self-selection mechanism works. However, with regard to the learning-by-exporting mechanism, they only find evidence of it for small and medium firms.

Manjón et al. [69,70], for the period 1990–2008, indicate that export intensity and past export experience matter in explaining the existence of the learning-by-exporting mechanism. Love and Mañez [39], from 1992 to 2013, support differences in export persistence arising from cumulative and punctuated learning by exporting. Mañez et al. [60], for the period 1990–2009, analyse jointly the linkages among R&D, exports and productivity. They evidence a direct positive effect of past exporting and R&D on firms' future productivity.

3. Data and Descriptive Statistics

3.1. Data

Throughout the analysis, we use a Spanish firm-level panel data set spanning 26 years (1991–2016). The data come from the Encuesta sobre Estrategias Empresariales (ESEE), which is drawn up annually by the Fundación de la Sociedad Estatal de Participaciones Industriales (FundaciónSEPI) under an agreement with the current Spanish Ministry of Finance. The survey provides a representative sample of the population of Spanish manufacturing firms with ten or more employees (See more detailed information about the ESEE in [18,67,71]). The survey contains, in a consistent way, time series of cooperatives. Its unbalanced nature derives from the frequency of entry and exit behaviour of firms, and from the missing observations. The activity of firms is classified into 20 different industries, according to the three-digit aggregation CNAE-09 of manufacturing industries. The ESEE provides information since 1990 or 1991, depending on the variables. Some of the variables included in our study, such as employment, start in 1991. For this reason, we decided to begin the analysis in 1991. The analysis ends in 2016, as this was the last year the data was available. Our initial sample covers 101 work cooperatives of the manufacturing sector. After cleaning the data, avoiding missing information on critical variables for the analysis, our final sample is an unbalanced panel of 70 cooperatives, which provided information for at least three consecutive years over the period 1991–2016.

The sample is lower than is typical in studies of this nature. The analysis of self-selection needs to differentiate cooperatives according to their export behaviour and to define new-exporters (analysis group) and non-exporters (control group). Diverse studies define new-exporters in different ways, probably influenced by the data restrictions (See, for instance, how the new-exporters are defined in studies such as [19,21,22,29,34,48,56,67]). Our problem is that the sample does not have enough cooperatives that, during the period, change their export status. This makes it impossible to have a reliable analysis group, even if we relax the definition of new-exporter. Precisely for that reason, it will not be possible to address the self-selection analysis as such.

In addition, to assessing the learning-by-exporting mechanism with a robust and reliable methodology, we should compare the situation of the new-exporting cooperatives with what they would have experienced had they not started to export. Given that the counterfactual is unobservable, it is necessary to find a feasible way to identify the learning-by-exporting effect. Once again, it is not possible to apply different methodologies proposed by the literature because of the limitations of our sample (We can find several ways to analyse learning-by-exporting in papers such as [19,34,36,38,42], among others).

Summarizing, this study would want to follow the conceptual framework exposed in Section 2 and carry out the first analysis focused on Spanish cooperatives. However, the limitations in the

data available make it impossible to perform a self-selection and a learning-by-exporting analysis. We believe that such limitations do not diminish the importance of trying to shed more light on the behaviour of cooperatives in international markets. Thus, we will perform the analysis despite the aforementioned issues. Data will allow us, on the one hand, to test whether exporters exhibit better performance than non-exporters, the so-called export premium, and on the other hand, whether it is possible to deduce that the learning-by-exporting effect might exist by analysing the differential growth in favour of exporters. Therefore, we will test the following two hypotheses related to these assumptions:

Hypothesis 1 (H1). *Exporting cooperatives perform better than non-exporters.*

Hypothesis 2 (H2). *Exporting boosts performance growth.*

3.2. Descriptive Statistics

Table 1 provides information of the exporting cooperatives' relative importance. The percentage of exporters moves between 36% and 69%. Overall, the weight of exporters increases across time.

Table 1. Cooperatives' export patterns.

Year	Exporters %	Year	Exporters %
1991	36.4	2004	62.5
1992	36.4	2005	62.5
1993	36.4	2006	69.4
1994	37.5	2007	69.7
1995	41.4	2008	68.4
1996	46.4	2009	67.7
1997	50.0	2010	68.2
1998	52.0	2011	67.9
1999	50.0	2012	68.7
2000	60.7	2013	68.1
2001	59.3	2014	69.2
2002	59.3	2015	69.6
2003	64.0	2016	68.2

Source: Own calculation based on Encuesta sobre Estrategias Empresariales (ESEE).

The cooperatives belong to the manufacturing sectors shown in Table 2. The activities related to food and textile are the most abundant. Instead, industries that need higher initial investments, such as chemicals, pharmaceuticals or other transport equipment show minor importance. As [72] points out, in these sectors the difficulty to access credit and the presence of a large number of multinationals may reduce the establishment of cooperatives.

Table 3 shows firms' characteristics included in our analysis and the main descriptive statistics relating to our sample. In line with [19,21–23,29], the dimensions of cooperatives' performance we take into account are as follow (See Appendix A for calculation details):

- Scale of operation: Sales, employment.
- Profitability: Gross operating margin.
- Efficiency: Labour productivity, total factor productivity.
- Capital endowments: Capital intensity.
- R&D activities: R&D effort.
- Workforce: Wages, skilled labour intensity.

Before carrying out the evaluation of the causal relationship between these cooperatives' characteristics and their export situation, Table 3 allows us to analyse the differences in such characteristics between exporters and non-exporters. The stylized fact reported by the literature

that exporting cooperatives exhibit better performance than non-exporting ones is found in the sample. Although this, we need to go further and develop a more formal and systematic test to assess the differences between exporters and non-exporters.

Table 2. Sector structure and coverage of the sample.

Industry	Observations	Exporters %
1. Meat products	36	50.0
2. Food and tobacco	108	52.8
3. Beverage	80	71.3
4. Textiles and clothing	131	4.6
5. Leather, fur and footwear	25	100.0
6. Timber	0	-
7. Paper	0	-
8. Printing	38	31.6
9. Chemicals and pharmaceuticals	12	50.0
10. Plastic and rubber products	10	50.0
11. Non-metal mineral products	30	80.0
12. Basic metal products	7	100.0
13. Fabricated metal products	61	65.6
14. Machinery and equipment	82	97.6
15. Computer products, electronics and optical	21	61.9
16. Electric materials and accessories	28	100.0
17. Vehicles and accessories	56	69.6
18. Other transport equipment	0	-
19. Furniture	21	100.0
20. Other manufacturing	0	-
Total	746	58.7

Source: Own calculation based on ESEE.

Table 3. Characteristics of work cooperatives (exporters and non-exporters).

	Mean	Std. Deviation	Minimum	Maximum
Variables exporters				
Sales (Millions of euros)	87.74	149.48	0.15	812.39
Gross operating margin (%)	7.95	10.05	−38.50	40.20
Labour productivity	26.84	19.19	1.19	228.53
Total factor productivity	1.16	0.86	−4.17	1.34
Wages (Thousands of euros)	15.57	27.85	0.10	149.50
Employment (average workers)	467.25	784.00	6.00	4178.00
Capital intensity	28.61	9.79	7.41	56.93
Skilled-labour intensity (%)	7.51	7.34	0.00	36.00
R&D effort (%)	1.63	3.13	0.00	21.40
Variables non-exporters				
Sales (Millions of euros)	6.21	21.61	0.01	153.77
Gross operating margin (%)	3.96	17.39	−120.50	73.70
Labour productivity	11.74	9.62	0.67	64.61
Total factor productivity	0.65	1.20	−5.24	2.02
Wages (Thousands of euros)	0.57	1.04	0.01	6.65
Employment (average workers)	41.80	80.89	2.00	788.00
Capital intensity	15.11	8.56	1.60	42.05
Skilled-labour intensity (%)	2.07	5.45	0.00	33.30
R&D effort (%)	0.16	1.07	0.00	15.30

Source: Own calculation based on ESEE.

4. Methodology

4.1. Performance Difference between Exporters and Non-Exporters: Export Premium

Our purpose is to test the first hypothesis of work:

Hypothesis 1 (H1). *Exporting cooperatives perform better than non-exporters.*

The descriptive statistics of the set of characteristics presented in Table 3 indicate that there are important differences between exporters and non-exporters. To test whether these differences are significant, we estimate the export premium, which is defined as the ceteris paribus percentage difference in some features between exporters and non-exporters in the same state and industry [19,21,29,48]. The export premium is estimated by applying the regression specified in Equation (1).

$$\ln X_{it} = \alpha + \beta_1 \text{Export}_{it} + \beta_2 \text{Control}_{it} + \gamma_j + \delta_t + u_{it} \quad (1)$$

$$(u_{it} = \mu_i + \varepsilon_{it})$$

where X is alternatively the different relevant characteristics (in logarithm, except gross operating margin, skilled-labour intensity and R&D effort), i is the index of cooperative, j is the index of industry and t is the index of year. Export is a dummy for the export status (1 if firm i exports, 0 otherwise), Control is a vector of control variables: cooperative age and logarithm of employment to control size (not in the employment and productivity regressions) (See Figure 1). We control for firm size and firm age because they may influence exports [57]. We assume an individual-specific component (μ_i), an industrial-specific component (γ_j) (codes of 20 different industries, according to the three-digit aggregation CNAE-09 of manufacturing industries) and a time-specific component (δ_t).

The export dummy variable indicates the difference between exporting and non-exporting firms. If exporters present better performance, the coefficient of the export dummy variable will be positive. Since the dependent variable is in logarithms, to present the export premium, computed from the estimated coefficient β , we follow [73] and calculate the difference in percentage between exporters and non-exporters as $(100(e^\beta - 1))$.

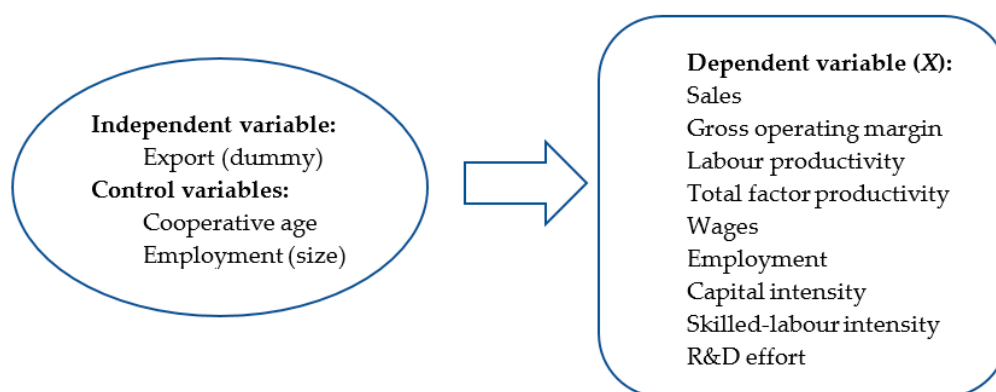


Figure 1. Variables used in the empirical analysis.

4.2. Growth Performance Differences: Exporters Versus Non-Exporters

The main idea behind the analysis we will carry out is related to the timing of learning. We argue that learning takes place when the decision of export is already made, not in the moment when exports begin [37]. We expect that if exporting promotes better performance through learning-by-exporting, we will find positive differential growth in favour of exporters [55]. We propose to analyse the following hypothesis of work:

Hypothesis 2 (H2). *Exporting boosts performance growth.*

The export status of cooperatives is defined by identifying exporting cooperatives as continuing exporters, which means that cooperatives that export/non-export in the first year continue to export/non-export throughout the period. This means that six cooperatives had to be removed from the sample.

We estimate the model (Equation (2)) where we compare the different performance growth between exporters and non-exporters by comparing one year versus the preceding one.

$$\ln X_{it+1} - \ln X_{it} = \alpha + \beta_1 \text{Export}_{it} + \beta_2 \text{Control}_{it} + \gamma_j + \delta_t + u_{it} \quad (2)$$

$$(u_{it} = u_i + \varepsilon_{it})$$

X is alternatively the different relevant characteristics; Export, Control, μ_i , γ_j and δ_t are defined the same way as before.

5. Results

In the previous section we have shown the methodology we have followed to get the results that we present below. First, we focus on the export premium results. Second, the differential growth between exporters and non-exporters is set. Finally, in the light of the results and with regard to the export market performance, we will reflect on whether cooperatives perform differently compared to capitalist companies.

5.1. H1: Exporting Cooperatives Perform Better than Non-Exporters

Table 4 presents the main results of the regression (1). The Chow test/likelihood ratio for poolability indicates that a pooled model is not adequate ($F = 0.000$), so we test for the choice between fixed effect model and random effect model. The probability value of the Hausmann test is greater than 5%, therefore we accept the null hypothesis and assume that the random effect model is the right model. The validation process indicates the goodness-of-fit of the regressions. For comparison purposes, we present the results of fixed, random and pooled-OLS models.

Table 4. Export premium.

	Pooled OLS	Fixed Effects	Random Effects
Sales	97.44 (0.0000) ***	0.80 (0.9086)	6.89 (0.3182)
Gross operating margin	79.28 (0.0000) ***	34.18 (0.8185)	33.29 (0.7689)
Labour productivity	70.08 (0.0000) ***	10.52 (0.2976)	33.23 (0.0001) ***
Total factor productivity	42.12 (0.0000) ***	21.15 (0.1411)	3.12 (0.1154) *
Wages	30.47 (0.0000) ***	5.01 (0.2852)	6.72 (0.1270) *
Employment	546.64 (0.0000) ***	89.81 (0.0000) ***	107.02 (0.0000) ***
Capital intensity	113.19 (0.0000) ***	6.13 (0.5297)	14.76 (0.1276) *
Skilled-labour intensity	119.21 (0.0000) ***	16.70 (0.0000) ***	78.87 (0.0425) **
R&D effort	84.75 (0.0000) ***	−8.71 (0.8172)	31.65 (0.2722)
Firm effects	No	Yes	Yes
Time effects	Yes	Yes	Yes

Note: p -values of t -test are in parentheses below estimates (robust standard errors are used). All regressions include the control variables. *** $p < 1\%$; ** $p < 5\%$; * $p < 10\%$. Source: Own calculation based on ESEE.

The results showed in Table 4 indicate important and significant differences between exporting and non-exporting cooperatives. The export coefficients are greater for the pooled model than for the random model. This fact indicates that many of the differences between exporters and non-exporters are explained to a large extent by firms' characteristics not controlled for in the OLS regression. Thus, unobserved firm heterogeneity matters. However, in most cooperatives' characteristics, after using random effects, the differences between exporting and non-exporting cooperatives remain significant.

Cooperatives that export are more productive, larger and pay higher wages than non-exporters. In addition, they are more capital- and skilled-labour-intensive. With regards to labour productivity, exporters are 33% more productive than non-exporters. As indicated by [21], to confirm that export premium in terms of productivity is not derived from a high capital intensity, we also estimate the difference in terms of total factor productivity (TFP). As can see in Table 4, the results show that TFP achieves less advantage related to labour productivity. The TFP of exporters is 3% higher than that of non-exporters.

Exporters employ 107% more workers, pay 7% more wages, have a 79% larger share of skilled workers and a 15% larger capital intensity than non-exporters. As we will see below, when we analyse the role of innovation, the more capital- and skilled-labour-intensity of the exporting cooperatives do not agree with the hypothesis that argues that trade endogenously induces technical changes, which in turn increases the relative demand for skilled workers [74]. Instead, these differences in the intensity of these variables could suggest that trade theory of comparative advantage may be at work within cooperatives [28].

We find two results that are not what we expected. First, figures show positive but no significant sales and gross operating margin differences between exporters and non-exporters (7% and 33%, respectively). Behind this lack of export premium could be hidden an explanation based on products. If within an industry there are a number of firms producing similar goods and the foreign demand is only interested in goods that are differentiated by some set of attributes, firms could present better performance in other characteristics but not necessarily in sales and margins if they are not capable of differentiating their products in the export market's desired line [29]. In this scenario, exporting decisions may not drive sales effort, with other sources of firms' heterogeneity being those which would play a crucial role [57,58]. This idea is in line with our results. In this sense, the results indicate that the control variables, size and age matter. We find a strong and significant effect of cooperatives' size (positive effect) and age (negative effect) on sales (135%, −12%) and margin (379%, −186%), confirming a greater influence of economies of scale and longevity than of exports.

Second, the effect of exporting on innovation is also positive but not significant (32%). Most empirical studies demonstrate that interdependence and complementarity between export and innovation exists. However, they do not provide a uniform answer about the direction of this relationship. The positive effect of exports on innovation mainly leans on the fact that stronger competition in foreign markets stimulates firms to innovate in order to improve their efficiency and to remain competitive [40,57,62]. Furthermore, working in foreign markets allows them to have access to a better and cheaper supply of technologies and innovation inputs [59]. Our cooperatives' innovation figures do not show any such positive effects, the data indicating that 95% of our sample move between 0 and <6% of the R&D effort (Among the main factors that play a role in the underinvestment, [14] indicate the difficulty of cooperatives in accessing external funding or the risk aversion of their members), without distinguishing by cooperatives' size, age or export condition. The lack of innovation makes cooperatives lose all advantages of the bidirectional causality relationship between the decision to export and innovate.

The general picture drawn from this analysis is that exporting cooperatives outperform non-export cooperatives. Most of our results are consistent with the earlier findings for firms in Spanish manufacturing. For instance, [60] finds export premium in the employment, labour productivity and capital intensity; [58] indicates that exporters are larger, more innovative, more productive, pay higher wages and are more capital intensive; [18,23] confirm the existence of substantial export premium in

many indicators of economic performance, such as productivity, size, wages, value added, capital intensity, employment, qualified workers or R&D; [65] indicates the existence of a productivity premium in manufacturing firms and [75] argues that it also exists in firms operating in the services sector.

So far, the analysis carried out allows us to validate the first hypothesis: export cooperatives perform better than non-exporters. However, we cannot go beyond and analyse whether this better performance involves a self-selection mechanism. We can intuit that it is fulfilled by cooperatives, because those studies that conclude that export premium exists also conclude that self-selection is achieved by the firms, but our sample does not make it possible to confirm this robustly.

5.2. H2: Exporting Boosts Performance Growth

In the previous, we have shown that more internationalized cooperatives perform better than domestic firms. Now, this section will investigate how growth interacts with exporting. Table 5 presents the result of estimating the model (2). The Chow test/likelihood ratio for poolability indicates that the pooled model is adequate (Except for sales and wages, in which random effects is shown to be more appropriate model). The validation process indicates the goodness-of-fit of the regressions. For comparison purposes, we present the results of fixed, random and pooled-OLS models.

Table 5. Export premium of the performance growth.

	Pooled OLS	Fixed Effects	Random Effects
Sales ¹	1.61 (0.0026) ***	−4.00 (0.5797)	1.72 (0.6278)
Gross operating margin	−2.22 (0.4132)	−11.13 (0.5823)	−9.01 (0.9603)
Labour productivity	−2.85 (0.0002) ***	−15.54 (0.1797) *	−2.51 (0.6411)
Total factor productivity	−0.74 (0.4527)	−14.52 (0.3206)	0.35 (0.9588)
Wages ¹	1.87 (0.0000) ***	−0.35 (0.9441)	1.44 (0.4389)
Employment	3.78 (0.0000) ***	−3.46 (0.4562)	4.11 (0.0486) **
Capital intensity	−3.52 (0.0000) ***	−3.37 (0.7322)	−4.76 (0.3099)
Skilled-labour intensity	26.08 (0.0000) ***	20.49 (0.7725)	31.30 (0.3553)
Sales	0.72 (0.8101)	7.07 (0.8738)	1.25 (0.9532)
Firm effects	No	Yes	Yes
Time effects	Yes	Yes	Yes

Note: *p*-values of *t*-test are in parentheses below estimates (robust standard errors are used). All regressions include the control variables. *** *p* < 1%; ** *p* < 5%; * *p* < 10%. ¹ Random effects. Source: Own calculation based on ESEE.

We are interested in the β coefficient. A significant positive result would suggest that exporters have faster performance growth than non-exporters, and so it would suggest that learning-by-exporting works. We are not able to test directly the learning-by-exporting mechanism; however, we approach it indirectly by supposing that exporting promotes better performance through learning by exporting.

The export premium shown in Table 5 lends weak support to the existence of important differences between exporting and non-exporting cooperatives. Overall, the positive effect of being an exporter is not appreciated, but it is difficult to draw definitive conclusions. Some variables yield different results compared with the previous subsection. The positive export premium detected in gross operating margin, productivity and capital intensity fade in the current analysis. These variables show negative coefficients. As [23] stresses, the evolution of these variables suggests the existence of a “gearing

up” period for export, in which exporters increase their capital intensity and their productivity to strengthen their export position. However, these differences disappear over the years.

The figures related to innovation are those we can expect, given the lack of export premium found in the previous subsection. There is no doubt that learning by exporting is contingent upon a firm’s innovation capabilities. As stated in [51], it is only with a sufficient amount of innovation that the firm is able to learn from exports.

With respect to wages, a low and non-significant level of export premium is detected. It is worth noting that cooperatives are more targeted towards employment maximization than towards member incomes [76]. Wages are more flexible in cooperatives than in capitalist firms. In downturn periods especially, they internalize the negative externalities of the market, reacting with a decrease in working hours or wages instead of proceeding to a reduction of workforce [77–81]. This could help to understand why the growth rate premiums between exporters and non-exporters are practically non-existent (1%).

The only results that fit with what we expected are those related to employment. There exists a positive and significant correlation between the increase in employment and exporting. Figures also reflected that exporting is strongly correlated with the workers’ skill levels’ growth. Employment growth of exporters is roughly 4% greater than that of non-exporters, and that of skilled-labour intensity is close to 26%. This statistically significant impact may stem from two reasons. First, the strategy of opening to the foreign markets emerges as one of the main tools to defend employment [82]. Second, the greater stability in the work exhibited by the cooperatives facilitates both the investment in human capital and the improvement of the skills of the workers by learning how to do their work efficiently [40,83].

Taking employment as an indicator of the cooperatives’ size, the 4% above reveals that in a global stage, export matters. Our findings suggest that exporting influences the evolution of the cooperatives’ size. In this regard, [14], analysing this topic and referring to other studies, highlights some strategies used by cooperatives to solve their medium-small original size problem and to gain bargaining power in the export markets. Specifically, the authors suggest that cooperatives strengthen their position in foreign markets by creating cooperative groups and by cooperating with other cooperatives and local organizations.

Overall, results give weak support to our hypothesis that exporting boosts performance growth and therefore they do not allow us to affirm that exporting promotes cooperatives’ relevant characteristics through the transfer of knowledge. In this finding, there is less consensus in the literature focused on Spanish firms. On the one hand, with respect to productivity, the results reached by [18,64,75] are similar to our own. These studies do not support the hypothesis that productivity growth for exporting firms was greater than productivity growth for non-exporters. On the other hand, [69] pointed out that exporting leads to gains in productivity, which is evidence that the learning mechanism works, and [70] indicates that the productivity improvement associated with learning-by-exporting is larger for those Spanish firms that show greater intensity exporting.

With regard to innovation, [23,60] do not agree with our results. The former conclude that exporting positively affects innovation and vice versa. The latter find differences between exporters and non-exporters during the pre- and post-entry period. New-exporters spent more on R&D in both periods. Hence, the authors appreciate the existence of self-selection and learning-by-exporting mechanisms. For their part, [41,84] examine the relationship between family firm and learning-by-exporting and prove that family-controlled firms are more efficient in taking advantage of the knowledge learnt through their exporting activity.

Regarding employment, [23] agrees with us in appreciating a learning-by-exporting effect. However, they differ from us with respect to other conclusions. They find evidence of the learning-by-exporting mechanism in variables such as wages, productivity, sales and R&D and do not find evidence of this mechanism in firms with more skilled workers.

Summarizing, the estimates show relevant differences in performance between cooperatives that sell in the export market and those that operate solely in the domestic market, confirming our first work hypothesis, which stated that exporting cooperatives perform better than non-exporters. As regards the second work hypothesis, we have concluded that there is no clear evidence that the differential widens with continued export experience. These results allow us to presuppose that a self-selection mechanism may exist but, at the same time, are not consistent with a process of learning-by-exporting.

Our results could be questioned because they might be due to the changes in the sample composition rather than the effect of internationalization [23]. To check their robustness, we have carried out two robustness checks. First, we estimate again the models (1) and (2) but changing the sample. We work with a balanced sample to be sure we are comparing the same cooperatives along the period. Thus, we exclude cooperatives not reporting for all years in the relevant period. Second, we estimate the Equation (2) to know the growth rate premium of exporters based on their initial firm control variables' values [19]. The reference year is 1991. In this reference year, cooperatives have the status of exporters (1) or of non-exporters (0) and this does not change during the period of analysis. The results lie in the same line of the patterns we find in our baseline estimations. They are available upon request.

5.3. Do Cooperatives Perform Differently?

Focusing on our cooperatives' sample and on ESEE data of the rest of manufacturing firms ("other firms"), Figure 2 plots the percentage-point difference (pp) between the percentage that exporting firms represent over the total "other firms" and that of cooperatives. The data show that cooperatives' exporting activity does not yet have the relative importance that it shows in capitalist firms, although the distances have been reduced. Thus, we can see that the gap between both percentages has narrowed considerably. If in 1991 the difference was 15 pp, in the final year analysed, 2016, it had reduced to 3 pp. It is worth noting that during the 2008 crisis, the relative importance of exporting cooperatives exceeded that of the "other firms". According to [72], in the face of the 2008 crisis, the foreign markets became a strategic element for cooperatives.

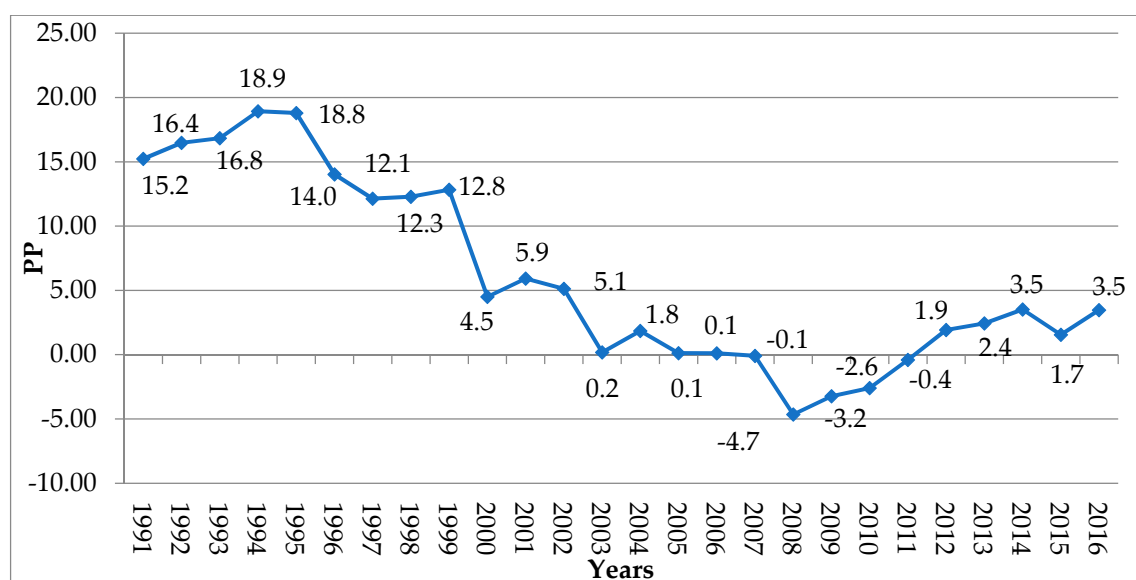


Figure 2. Relative weight of exports: difference in percentage points between "other firms" and cooperatives (% "other firms"—% cooperatives). 1. Within "other companies" we include the other legal forms, apart from cooperatives, that the ESEE includes: Individual firm; stock corporation; limited company; workforce owned limited company (SAL); and other firms.

Regarding our working hypotheses and at first sight, the answer to the subsection question is no, i.e., cooperatives perform in a similar way to capitalist firms. The analysis carried out leads to the affirmation that, under a scenario of firm heterogeneity in international markets, there are substantial differences between exporter and non-exporter cooperatives. Since an export premium has been found in several cooperative characteristics, it can be deduced that exporter cooperatives perform better than non-exporters. Likewise, we do not find positive differential growth in favour of exporting cooperatives. These results fit with a wide range of international empirical studies and also with those focused on Spanish firms.

Apart from these findings, we would like to open certain reflections that are beyond the scope of this work but that should be taken into account when analysing the process of the internationalizing of cooperatives. It should be noted that the internationalization process goes beyond that of exporting. International business is a long-term project that requires a large, integrated and developed network of infrastructures and services. Firms need significant resources to be able to access the knowledge of the foreign markets where they want to position themselves in an up-to-date manner [85]. Exports are the first step in this complex process. In this sense, Spanish cooperatives mostly use the export strategy, which may be a way to open new opportunities, helping to foster and strengthen the internationalization process [86]

However, studies such as [14,87], among others, note that internationalization processes may come into conflict with the nature of cooperatives. The cooperatives' democratic model runs into legislative, geographical, cultural or competitiveness barriers, which can drive them to become a "coopitalist" dual model that weakens the cooperatives' model and increases tensions when it comes to complying with their principles [14,88]. Empirical evidence that this "coopitalist" process occurs would be that an important number of cooperatives change their legal form for other capitalist forms. Under the period and the sample of study, we find this in 11% of the clean sample. Even though it is not a strong indicator, it does allow us to intuit that exporting does not necessarily have to involve a degeneration of cooperatives towards capitalist forms of organization.

We can also look at the same idea from another perspective. The presence in international markets may allow cooperatives to survive, staying competitive and preserving employment [82]. As we have seen in the results obtained in this research, exporter cooperatives have a high advantage in employment and, also in addition, the evolution of wages suggests a greater ability to adapt via income than via employment. These findings would give grounds to argue that in general, within the sample and the period analysed, exporting cooperatives preserve one of their principles that lead them to favour the workforce over income [89,90]. Internationalization is then revealed as an efficient strategy to safeguard domestic employment of cooperatives [14,91].

A distinctive feature between cooperatives and capitalist companies is innovation. The literature that defends the positive correlation between exports and innovation is not borne out by our results. According to our analysis, exports do not significantly encourage innovation, which means that one of the inefficiencies of cooperatives continues to be their lower propensity to innovate compared to capitalist firms [92].

Summarizing, the effects of exporting are not very different in capitalist firms and in cooperatives. A self-selection mechanism is deduced while learning-by-exporting achieves more uncertain support. Probably the main challenge for cooperatives is to face their role in the foreign markets while preserving their democratic and collective decision-making. Empirical studies demonstrate that the possible degeneration that internationalization implies can be resolved through processes of regeneration, where democratic structures are reinforced and managers are trained in cooperative values [14,82,87].

6. Conclusions

There is a great deal of literature that deals with the performance of exporters compared to non-exporters. The more common conclusions are that exporting enables firms to reach a better performance. Studies suggest there are two mechanisms to explain such "superiority". On the

one hand, there is the self-selection mechanism, which leans on the fact that most productive firms become exporters as they can cover fixed costs associated with foreign markets. On the other hand, there is the learning-by-exporting mechanism, which is related to the knowledge acquired from participation in these markets. The self-selection mechanism gathers more empirical consensus than that of learning-by-exporting, whose results are more ambiguous and inconclusive.

Empirical studies mainly focused on Spanish manufacturing firms are also abundant. However, neither the theoretical nor the empirical assessments regarding an alternative organizational form to capitalist firms can be found. We are referring to cooperatives, a suitable association formula that has demonstrated their capacity to survive in a capitalism environment. Hence, the main contribution of this paper is to fill this gap and provide results about the effects of exporting on cooperatives' performance.

This paper examines how exporting cooperatives evolve and differ from those that are focused on the domestic market. We use a Spanish firm-level panel data set spanning 26 years (1991–2016). We work with a wide set of variables that reflect cooperatives' performance: sales, gross operating margin, productivity, wages, employment, capital intensity, skilled-labour intensity and R&D effort. The challenge of the analysis is to deal with two working hypotheses: (i) Exporting cooperatives perform better than non-exporters; (ii) exporting boosts performance growth.

With regard to the first working hypothesis, this paper provides evidence that exporting cooperatives outperform those that are focused on the domestic market. Cooperatives that export are more productive, larger and pay higher wages than non-exporters. In addition, they are more capital- and skilled-labour-intensive. The first hypothesis is validated and it is possible to intuit that a self-selection mechanism exists. The other hypothesis does not find such conclusive results. Only employment and skilled-labour intensity of exporters show significant faster performance growth than non-exporters. We can lend weak support to the fact that exporting boosts performance growth, and therefore to the fact that an efficient transferring knowledge could exist.

The positive and significant export premium found in employment and skilled-labour intensity means on the one hand that the presence in international markets strengthens cooperatives' principles that lead them to preserve the workforce beyond incomes, even in downturns [93]. On the other hand, greater job stability facilitates investment in human capital and improvement of workers' skills, which in turn has a positive impact on the company [83].

The paper also provides evidence that exports have not been a bulwark to boost sales and margins and that there is no innovation premium. In our opinion, both aspects are related. Fayos et al. [86] indicate that there is a consensus in the literature on the fact that innovation in cooperatives must be oriented towards the consumer by differentiating products and developing the brand as a differentiating factor. It will be in this scenario that exporting will improve sales and margins of cooperatives, which at the same time will improve again innovation and research. The challenge is important but should be possible. In this vein, [94] emphasizes the role that cooperatives' values and principles should play. They affirm that a deepening in cooperative principles enhances the social capital, defined in a simple way as the goodwill available towards the individual or group, which facilitates and activates the capacity to absorb knowledge, and therefore the innovation process. Given the weakness in innovation highlighted in this paper, in our opinion it is necessary to apply public measures focused on stimulating innovation but also on training how to absorb, manage and channel knowledge under the cooperatives' principles and values, because their strength arises from them.

Following on to the policy levels, it can be argued that, apart from the subsidies that currently exist to promote projects of creation, modernization and employment of cooperatives (At the Spanish central government level, they can be consulted at: http://www.mites.gob.es/es/Guia/texto/guia_2/index.htm), it is essential to establish public policies to foster exports, which, according to our findings, would also help to consolidate and create employment. These export support measures are especially necessary in small-medium cooperatives. Again, policymakers have to be clear that any measure taken must be accompanied by an effort to train, teach and consolidate the principles and values of cooperatives.

We would like to highlight some limitations of this study. First, the sample is lower than is normal in studies of this nature. This fact has conditioned the depth of the analysis. It has not been possible to study either self-selection or learning-by-exporting robustly. Second, the survey provides a representative sample of the population of Spanish manufacturing firms with ten or more employees; this could lead to the overestimation of export participation [64]. Furthermore, data are limited to the manufacturing industry. However, the validity of the ESEE is shown by the large number of papers using it to analyse firms' strategic decisions.

To the extent that the paper opens up the analysis of the trade and performance focused on Spanish cooperatives, there are a lot of future lines of research under interest. We want to stress the following one. Our results shed light on the relevance of size when analysing export premium, and exporting boosts performance growth. In line with our results, [67] find evidence that in Spanish manufacturing firms, the post-entry effects with respect to the extra productivity growth of exporting is size-dependent. Moreover, they highlight that, as put forward by [38], these size-dependent patterns are linked to the difficulties of the export markets. As we can see, there is an interesting field of inquiry into the different patterns of performance for large and small export cooperatives, distinguishing between destinations. However, a shortcoming of this future line of research is again the data. In terms of foreign markets, the ESEE only provides information of whether firms export to the Ibero-American, EU, OCDE countries and the rest of the world. Furthermore, this information is updated only every four years. Despite the constraint of the data set, the study remains of interest.

This paper is only the first step. It is necessary to promote the cooperatives' own awareness to facilitate statistic information when it is required by official institutions. At the same time, administration has to improve the social economy statistics in order to facilitate researchers' work. Policymakers, economists and society in general should be conscious that, generally, cooperatives and social economy, are a successful alternative organizational model that must be preserved and promoted.

Author Contributions: All the authors participated equally in the conception and design of the work. Conceptualization, M.S.-R. and T.T.-S.; methodology, M.F.-P.; validation, T.T.-S. and M.F.-P.; formal analysis, M.S.-R. and T.T.-S.; investigation, M.S.-R.; resources, T.T.-S. and M.F.-P.; data curation, M.F.-P.; writing—original draft preparation, M.S.-R.; writing—review and editing, T.T.-S. and M.S.-R.; visualization, M.F.-P.; supervision, M.S.-R., T.T.-S. and M.F.-P.; project administration, M.S.-R.; funding acquisition, M.F.-P. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Acknowledgments: The authors thank to the *Fundación SEPI* and the currently Spanish Ministry of Finance for facilitating the cooperatives' statistics used in our research.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Measure details of the relevant variables.

Sales

This includes the sale of goods, the sale of transformed products (finished and half-finished), the provision of services and other sales (packages, packaging, by products and waste), sale returns excluded.

Gross operating margin

Measurement of the company's profitability, defined as the percentage that the sum of the sales, the change in stocks and other current management income minus the purchases, external services and labour costs, represent on total sales plus the change in stocks of them and other current management income.

Labour productivity

This is defined as the added value divided by the total effective hours worked. The effective hours worked are measured as the product of the average number of workers during the year (this is calculated as the sum of the full-time regular personnel, 1/2 of the part-time regular personnel, both items on December 31st, and the average number of eventual workers) and the hours effectively worked during the year per worker (this is equal to the sum of the normal work time and overtime minus the non-worked hours).

Total factor productivity (TFP)

Following [95] and [96], the TFP index for firm i at time t is measured:

$$\ln TFP_{it} = \ln Y_{it} - \overline{\ln Y_t} + \sum_{t=2}^t (\overline{\ln Y_t} - \overline{\ln Y_{t-1}}) - \left[\sum_{n=1}^N \frac{1}{2} (\overline{S_{nit}} + \overline{S_{nt}}) (\ln X_{nit} - \overline{\ln X_{nt}}) + \sum_{t=2}^T \sum_{n=1}^N \frac{1}{2} (\overline{S_{nt}} + \overline{S_{nt-1}}) (\overline{\ln X_{nt}} - \overline{\ln X_{nt-1}}) \right]$$

where Y_{it} denotes real added value produced by firm i at time t . The set of inputs (n) used is expressed by X_{nit} that can be, alternatively, real capital (K), labour (L) and real intermediate inputs (M). S_{nit} is the cost share of input X_{nit} in the total cost. Symbols with upper bars correspond to measures for the hypothetical firm (the reference point), computed as the means of the corresponding firm variables, over all firms in year t . The $\overline{\ln Y}$ and $\overline{\ln X}$ reference points are the geometric means of the firm's output and input, respectively, while the cost shares (\overline{S}) are computed as the arithmetic mean of all firms.

In line with [18,64,97], the variables used in the measuring of this index are as follow:

Real added value (Y_{it}): we have constructed individualized deflators for each cooperative that have been applied to the nominal added value. The deflator has been elaborated using the information of the variations in the sales prices in the different markets where the cooperatives operate, weighted by sales of each market over the total sales.

Labour Factor (L): The labour input is approximated by the total effective hours worked defined above.

Real capital (K): The capital is approximated by the net capital stock. The variable is expressed in real terms using the price index for equipment goods published by the Instituto Nacional de Estadística (INE).

Real intermediate inputs (M): This is defined as the sum of purchases and external services, plus the variation in the stock of purchases. The variable is expressed in real terms using the price index for intermediate goods published by the INE.

To calculate the costs share

1. Cost of labour: The cost of labour includes gross salaries and wages, compensations, social security contributions paid by the company, the contributions made to supplementary pension systems and other social expenses.

2. Cost of capital: We estimate a user cost of capital (C_c) as follows:

C_c = cost of firm's long-term debt + depreciation rates—variation of the price index for capital goods.

Wages

This records gross salaries and wages, compensations, social security contributions paid by the company, the contributions made to supplementary pension systems and other social expenses.

Employment

This is measured as the average number of workers during the year.

Capital intensity

The ratio is defined as the capital stock divided by the average number of workers during the year.

Skilled labour intensity

This is measured as engineers and graduates over total personnel of the company on December 31st (in %).

R&D effort

This is measured as total expenses on R&D plus imports of technology, over total sales (in %).

Age (years)

This variable reflects the year in which the company was incorporated.

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